

Amendments to the Drawings

The attached sheets of drawings have been amended to avoid the presence of frames, and to ensure the absence of hand-written annotations.

REMARKS

The description on pages 20 and 27 has been amended to delete reference to the imbedded hyperlinks and/or other forms of browser-executable code for compliance with MPEP 608.01.

With regard to the drawings, these have been amended to avoid the presence of frames. The revised set of drawings submitted herewith also does not include hand-corrections, but rather typed text. The figure legends have also been amended to refer to parts of figures on an individual basis.

Claim 2 has been amended to replace "peptide" with "polypeptide". Claims 2-6 have been amended to replace "a complement" with "full complement". Claims 2, 6 and 21 have been amended to specify comparison to an untransformed plant of the same species, in accordance with the Examiner's suggestion. Claims 10, 29 and 30 have been cancelled. Claim 3 has been amended to specify sequence identities to the protein encoded by the ROB5 gene, as suggested by the Examiner. Claims 4 and 5 have been cancelled. Claims 7, 8, 22 and 23 have been amended to conclude the claims with "as compared to an untransformed plant of the same species" at the end of the claims.

Claim 27 has been deleted from the application since it was dependent upon an unelected claim.

Claim Rejections Under 35 USC 112

The claims have been amended to avoid recitation of the term "ROB5". In each case, this has been replaced with "nucleotide sequence" to avoid indefiniteness.

Claims 2 and 6 have been amended to specify a transgenic plant comprising cells exogenously expressing the indicated nucleotide sequence, thereby addressing the Examiner's assertion that the former claims language was confusing, since it was unclear how a transgenic plant can exogenously express a nucleotide sequence. The corresponding rejection is thus addressed.

Claim 2 as amended addresses the Examiner's concern with regard to complementary sequences, and mention of encoded proteins or polypeptides. Claim 2 as amended, and read through the eyes of the skilled artisan, is no longer ambiguous and in full compliance with 35 USC 112. Any skilled artisan would appreciate upon reading the claim that the nucleotide sequence may be complementary to a sense strand, in which case the degree of sequence identity relates to a complement of the antisense strand, which would itself encode the protein in question. The same applies to amended claims 3 and 6, wherein either of the nucleotide sequence or a complement thereof encompasses the sense strand that encodes the corresponding protein. No further explanation is required in this regard.

Claim 6 has been amended to provide specific parameters for high stringent conditions in accordance with page 2 of the specification.

Claim 10 has been deleted thereby circumventing the corresponding rejection of this claim under 35 USC 112.

Applicant respectfully disagrees with the Examiner's rejection of claim 13 under 35 USC 112. A skilled artisan upon reviewing the definition of a DNA construct in accordance with page 22 of the description, as well as common general knowledge in the art, would appreciate that a DNA construct may be formed by ligating an insert into a vector. A DNA construct may therefore comprise a vector with a DNA insert ligated therein. The language of claim 13 is therefore entirely appropriate in accordance with common general knowledge in the art and the definition of "DNA construct" provided on page 22 of the description. The corresponding rejection under 35 USC 112 should therefore be withdrawn.

Claim 17 has been amended in accordance with the Examiner's suggestion to replace "derived" with "obtained".

Claim 20 has been amended as suggested by the Examiner to add a further step of expressing the nucleotide sequence in cells of the plant.

Claims 29 and 30 have been deleted from the application thus addressing the rejection under 35 USC 112 to those claims.

The Examiner objected to the elected claims under 35 USC 112, and asserted that the specification does not enable any person skilled in the art to make and/or use the invention commensurate with the scope of the claims. To address the Examiner's concern, the claims have been amended to include significant limitations. Claims 1, 4 and 5 have been deleted from the application since they were considered redundant. New claim 2 now specifies an isolated nucleotide sequence selected from that shown in SEQ ID NO: 1 or a complement thereof, or a nucleotide sequence encoding the polypeptide with at least 95% identity to the peptide encoded by the nucleotide sequence of SEQ ID NO: 1. Independent claim 6 has a similar scope by specifying the nucleotide sequence SEQ ID NO: 1 or a nucleotide sequence that can hybridize under defined highly stringent conditions to the nucleotide sequence of SEQ ID NO: 1 or a full complement thereof. Applicant submits that the claims as amended are fully supported and enabled by the description. Any skilled artisan would appreciate that other ROB5 genes and proteins will exist in nature that exhibit a high degree of sequence identity to those disclosed in the application. Limitation of the claims in accordance with the Examiner's assertions only to those nucleotide sequences encoding proteins having 100% identity to those encoded by SEQ ID NO: 1 would unfairly limit the scope of the claims and render the claims readily open to abuse by would-be infringers. Such would-be infringers could simply amend the nucleotide sequence of SEQ ID NO: 1 to replace the coding of a single amino acid for a similar amino acid to avoid infringement. Thus, limitation of the claims as suggested by the Examiner would not be commensurate with the support and evidence provided in the description for the use of ROB5 polynucleotide and polypeptide sequences. The Examiner is also requested to recognize the inventors' focus upon extensive field trial evaluations of corresponding transgenic canola and flax plants, which were important for deducing the significance of ROB5 proteins and gene sequences to the agricultural industry. Applicant should not be penalized for failing to isolate homologous ROB5 sequences from other DNA libraries from other species. The isolation of such homologous sequences is a matter of routine in the art, and the results of searching such libraries would not contribute to Applicant's understanding of the function of the ROB5 genetic sequences and their potential for developing crops that exhibit increases resistance to adverse environmental conditions. Favourable consideration of the revised claims is respectfully requested.

The objections to claim 1 under 35 USC 112 extending from page 10 to page 14 of the official action are overcome by the deletion of that claim.

The objection to claims 16-24 under 35 USC 112 on page 14 of the official action is overcome by amendment of claims 16 and 20 to specify that the plant cell expresses the nucleotide sequence.

Claim 6 has been amended to specify the hybridization and wash conditions contemplated in part (b). Applicant submits that such hybridization and wash conditions are so stringent that the claim only encompasses nucleotide sequences that are very closely related to SEQ ID NO: 1 or a full complement thereof. Applicant submits that no undue experimentation would be required by one of skill in the art to determine how to use sequences identified by hybridization in a method of producing a transgenic plant with an altered stress response and/or growth potential. Indeed, the claim is limited to those nucleotide sequences that exhibit such functional properties when expressed in plants. No further guidance is required. The Examiner is reminded that claim 6 is to be viewed through the eyes of a skilled artisan with a mind willing to understand the invention. Such a skilled artisan would fully appreciate the narrow scope of the claim in view of the highly stringent conditions recited in combination with the functional requirement for the nucleotide sequences (or a complement thereof) to encode a protein that alters a stress response and/or growth potential of a transgenic plant comprising cells exogenously expressing such sequences. Favourable reconsideration is respectfully requested.

Claims 2-6 purposely encompass nucleotide sequences that may be a full complement of SEQ ID NO: 1 or a close variant thereof. Any skilled artisan would appreciate, upon reading the entire specification, as well as in view of common general knowledge, that complementary sequences may be utilized for antisense RNA expression resulting in transgenic plants having altered stress responses and/or growth potential. The Examiner's assertion that undue experimentation would be required is unfounded and the corresponding rejection should be withdrawn.

Claim 28 has been deleted from the application thereby circumventing the rejection of that claim.

Applicant submits that in view of the aforementioned amendments to the claims, the rejection of the elected claims under 35 USC 112 in part 9 of the official action starting on page 15, is overcome. The claims as amended encompass nucleotide sequences, or complements thereof, that encode polypeptides having at least 95% sequence identity to the protein encoded by SEQ ID NO: 1. As such, Applicant submits that the claims as amended have an entirely appropriate scope and are fully enabled by the description in accordance with the discussion presented herein. Favourable consideration is respectfully requested.

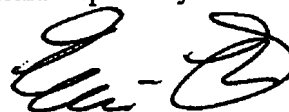
Claim Rejections Under 35 USC 102

The Examiner objected to claims 1-8, 10, 12-17, 20-24 and 27-30 for being anticipated by Liu et al. (The Plant Cell, Vol. 10, pp. 1391-1406). Applicant submits that, in view of the deletion of selected elected claims as well as significant limitation of the claims, any potential for anticipation by Liu et al. is avoided. Claim 1 has been deleted and claims 2-6 now specify a full complement. Therefore, the claims do not encompass 2-mers of the nucleotide sequences encoding CBF disclosed in the reference. Applicant submits that claim 6 as amended now encompasses a very limited group of nucleotide sequences that must hybridize under highly stringent conditions in a manner that they are differentiated from the nucleotide sequences of Liu et al.

Claim Rejections Under 35 USC 103

The claims as amended now encompass nucleotide sequences and methods involving such sequences that are well outside of those encompassed by Liu et al. Therefore, since the claimed polypeptide sequences are fully differentiated over those in Liu et al., the rejection of claims 18 and 19 should now be withdrawn. The Examiner is also reminded that claims 18 and 19 are dependent upon claim 17, which is ultimately dependent upon revised claim 2. Since claim 2 and claim 17 both define novel and non-obvious subject matter, it follows that dependent claims 18 and 19 also define novel and non-obvious subject matter because they include all of the limitations of claims upon which they depend. Favourable reconsideration of claims 18 and 19 is respectfully requested.

In light of the foregoing arguments and amendments, Applicant respectfully submits that the application is in good order for allowance.

A handwritten signature in black ink, appearing to read 'Edwin Gale', with a stylized flourish at the end.

Respectfully submitted,

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